SEQUENCE LISTING

<110> University of Rochester

        Min, Wang
        Liu, Yingmei

<120> THIOREDOXIN MUTANTS AND USES THEREOF

<130> 21108.0021U1

<140> Unassigned
<141> 2003-07-22

<150> 60/401,073
<151> 2002-09-02

<160> 58

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 105
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 1
Met Val Lys Gln Ile Glu Ser Lys Thr Ala Phe Gln Glu Ala Leu Asp
 1   5   10   15
Ala Ala Gly Asp Lys Leu Val Val Val Asp Phe Ser Ala Thr Trp Cys
            20   25   30
Gly Pro Cys Lys Met Ile Lys Pro Phe Phe His Ser Leu Ser Glu Lys
        35   40   45
Tyr Ser Asn Val Ile Phe Leu Glu Val Asp Val Asp Asp Cys Gln Asp
    50   55   60
Val Ala Ser Glu Cys Glu Val Lys Cys Met Pro Thr Phe Gln Phe Phe
65   70   75   80
Lys Lys Gly Gln Lys Val Gly Glu Phe Ser Gly Ala Asn Lys Glu Lys
            85   90   95
Leu Glu Ala Thr Ile Asn Glu Leu Val
            100   105

<210> 2
<211> 105
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 2
Met Val Lys Gln Ile Glu Ser Lys Thr Ala Phe Gln Glu Ala Leu Asp
 1   5   10   15

```
Ala Ala Gly Asp Lys Leu Val Val Val Asp Phe Ser Ala Thr Trp Ser
            20                      25                  30
Gly Pro Cys Lys Met Ile Lys Pro Phe Phe His Ser Leu Ser Glu Lys
            35                      40                  45
Tyr Ser Asn Val Ile Phe Leu Glu Val Asp Val Asp Asp Cys Gln Asp
            50                      55                  60

Val Ala Ser Glu Cys Glu Val Lys Cys Met Pro Thr Phe Gln Phe Phe
65                      70                  75                  80
Lys Lys Gly Gln Lys Val Gly Glu Phe Ser Gly Ala Asn Lys Glu Lys
                85                      90                  95
Leu Glu Ala Thr Ile Asn Glu Leu Val
            100                     105
```

```
<210> 3
<211> 105
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 3
```
```
Met Val Lys Gln Ile Glu Ser Lys Thr Ala Phe Gln Glu Ala Leu Asp
 1               5                  10                  15
Ala Ala Gly Asp Lys Leu Val Val Val Asp Phe Ser Ala Thr Trp Cys
            20                      25                  30
Gly Pro Ser Lys Met Ile Lys Pro Phe Phe His Ser Leu Ser Glu Lys
            35                      40                  45
Tyr Ser Asn Val Ile Phe Leu Glu Val Asp Val Asp Asp Cys Gln Asp
            50                      55                  60
Val Ala Ser Glu Cys Glu Val Lys Cys Met Pro Thr Phe Gln Phe Phe
65                      70                  75                  80
Lys Lys Gly Gln Lys Val Gly Glu Phe Ser Gly Ala Asn Lys Glu Lys
                85                      90                  95
Leu Glu Ala Thr Ile Asn Glu Leu Val
            100                     105
```

```
<210> 4
<211> 318
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 4
atggtgaagc agatcgagag caagactgct tttcaggaag ccttggacgc tgcaggtgat    60
aaacttgtag tagttgactt ctcagccacg tggtgtgggc cttgcaaaat gatcaagcct   120
ttctttcatt ccctctctga aaagtattcc aacgtgatat ccttgaagt agatgtggat    180
gactgtcagg atgttgcttc agagtgtgaa gtcaaatgca tgccaacatt ccagtttttt   240
aagaagggac aaaaggtggg tgaattttct ggagccaata aggaaaagct tgaagccacc   300
attaatgaat tagtctaa                                                  318

<210> 5
<211> 318
<212> DNA
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct


<400> 5
atggtgaagc agatcgagag caagactgct tttcaggaag ccttggacgc tgcaggtgat    60
aaacttgtag tagttgactt ctcagccacg tggcgtgggc cttgcaaaat gatcaagcct   120
ttctttcatt ccctctctga aaagtattcc aacgtgatat tccttgaagt agatgtggat   180
gactgtcagg atgttgcttc agagtgtgaa gtcaaatgca tgccaacatt ccagtttttt   240
aagaagggac aaaaggtggg tgaattttct ggagccaata aggaaaagct tgaagccacc   300
attaatgaat tagtctaa                                                  318


<210> 6
<211> 318
<212> DNA
<213> Artificial Sequence


<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct


<400> 6
atggtgaagc agatcgagag caagactgct tttcaggaag ccttggacgc tgcaggtgat    60
aaacttgtag tagttgactt ctcagccacg tggtgtgggc ctcgcaaaat gatcaagcct   120
ttctttcatt ccctctctga aaagtattcc aacgtgatat tccttgaagt agatgtggat   180
gactgtcagg atgttgcttc agagtgtgaa gtcaaatgca tgccaacatt ccagtttttt   240
aagaagggac aaaaggtggg tgaattttct ggagccaata aggaaaagct tgaagccacc   300
attaatgaat tagtctaa                                                  318


<210> 7
<211> 24
<212> DNA
<213> Artificial Sequence


<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct


<400> 7
aagcttatgg tgaagcagat cgag                                           24


<210> 8
<211> 24
<212> DNA
<213> Artificial Sequence


<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct


<400> 8
ctcgagttag actaattcat taat                                           24


<210> 9
<211> 165
<212> PRT
<213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 9
Met Ala Gln Arg Leu Leu Leu Arg Arg Phe Leu Ala Ser Val Ile Ser
1               5                   10                  15
Arg Lys Pro Ser Gln Gly Gln Trp Pro Pro Leu Thr Ser Arg Ala Leu
            20                  25                  30
Gln Thr Pro Gln Cys Ser Pro Gly Gly Leu Thr Val Thr Pro Asn Pro
        35                  40                  45
Ala Arg Thr Ile Tyr Thr Thr Arg Ile Ser Leu Thr Thr Phe Asn Ile
    50                  55                  60
Gln Asp Gly Pro Asp Phe Gln Asp Arg Val Val Asn Ser Glu Thr Pro
65                  70                  75                  80
Val Val Val Asp Phe His Ala Gln Trp Cys Gly Pro Cys Lys Ile Leu
                85                  90                  95
Gly Pro Arg Leu Glu Met Val Ala Lys Gln His Gly Lys Val Val Met
            100                 105                 110
Ala Lys Val Asp Ile Asp Asp His Thr Asp Leu Ala Ile Glu Tyr Glu
        115                 120                 125
Val Ser Ala Val Pro Thr Val Leu Ala Met Lys Asn Gly Asp Val Val
    130                 135                 140
Asp Lys Phe Val Gly Ile Lys Asp Glu Asp Gln Leu Glu Ala Phe Leu
145                 150                 155                 160
Lys Lys Leu Ile Gly
                165


<210> 10
<211> 165
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 10
Met Ala Gln Arg Leu Leu Leu Arg Arg Phe Leu Ala Ser Val Ile Ser
1               5                   10                  15
Arg Lys Pro Ser Gln Gly Gln Trp Pro Pro Leu Thr Ser Arg Ala Leu
            20                  25                  30
Gln Thr Pro Gln Cys Ser Pro Gly Gly Leu Thr Val Thr Pro Asn Pro
        35                  40                  45
Ala Arg Thr Ile Tyr Thr Thr Arg Ile Ser Leu Thr Thr Phe Asn Ile
    50                  55                  60
Gln Asp Gly Pro Asp Phe Gln Asp Arg Val Val Asn Ser Glu Thr Pro
65                  70                  75                  80
Val Val Val Asp Phe His Ala Gln Trp Ser Gly Pro Cys Lys Ile Leu
                85                  90                  95
Gly Pro Arg Leu Glu Met Val Ala Lys Gln His Gly Lys Val Val Met
            100                 105                 110
Ala Lys Val Asp Ile Asp Asp His Thr Asp Leu Ala Ile Glu Tyr Glu
        115                 120                 125
Val Ser Ala Val Pro Thr Val Leu Ala Met Lys Asn Gly Asp Val Val
    130                 135                 140
Asp Lys Phe Val Gly Ile Lys Asp Glu Asp Gln Leu Glu Ala Phe Leu
145                 150                 155                 160
Lys Lys Leu Ile Gly
                165
```

```
<210> 11
<211> 165
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 11
Met Ala Gln Arg Leu Leu Leu Arg Arg Phe Leu Ala Ser Val Ile Ser
 1               5                  10                  15
Arg Lys Pro Ser Gln Gly Gln Trp Pro Pro Leu Thr Ser Arg Ala Leu
            20                  25                  30
Gln Thr Pro Gln Cys Ser Pro Gly Gly Leu Thr Val Thr Pro Asn Pro
         35                  40                  45
Ala Arg Thr Ile Tyr Thr Thr Arg Ile Ser Leu Thr Thr Phe Asn Ile
    50                  55                  60
Gln Asp Gly Pro Asp Phe Gln Asp Arg Val Val Asn Ser Glu Thr Pro
65                  70                  75                  80
Val Val Val Asp Phe His Ala Gln Trp Cys Gly Pro Ser Lys Ile Leu
                85                  90                  95
Gly Pro Arg Leu Glu Met Val Ala Lys Gln His Gly Lys Val Val Met
            100                 105                 110
Ala Lys Val Asp Ile Asp Asp His Thr Asp Leu Ala Ile Glu Tyr Glu
         115                 120                 125
Val Ser Ala Val Pro Thr Val Leu Ala Met Lys Asn Gly Asp Val Val
    130                 135                 140
Asp Lys Phe Val Gly Ile Lys Asp Glu Asp Gln Leu Glu Ala Phe Leu
145                 150                 155                 160
Lys Lys Leu Ile Gly
                165


<210> 12
<211> 502
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 12
atggctcagc gacttcttct gaggaggttc ctggcctctg tcatctccag gaagccctct    60
cagggtcagt ggccacccct cacttccaga gccctgcaga ccccacaatg cagtcctggt   120
ggcctgactg taacacccaa cccagcccgg acaatataca ccacgaggat ctccttgaca   180
acctttaata tccaggatgg acctgacttt caagaccgag tggtcaacag tgagacacca   240
gtggttgtgg atttccacgc acagtggtgt ggaccctgca agatcctggg gccgaggtta   300
gagaagatgg tggccaagca gcacgggaag gtggtgatgg ccaaggtgga tattgatgac   360
cacacagacc tcgccattga gtatgaggtg tcagcggtgc ccactgtgct ggccatgaag   420
aatggggacg tggtggacaa gtttgtgggc atcaaggatg aggatcagtt ggaggccttc   480
ctgaagaagc tgattggctg ac                                           502


<210> 13
<211> 502
<212> DNA
<213> Artificial Sequence

<220>
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<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 13
atggctcagc gacttcttct gaggaggttc ctggcctctg tcatctccag gaagccctct   60
cagggtcagt ggccacccct cacttccaga gccctgcaga ccccacaatg cagtcctggt   120
ggcctgactg taacacccaa cccagcccgg acaatataca ccacgaggat ctccttgaca   180
acctttaata tccaggatgg acctgacttt caagaccgag tggtcaacag tgagacacca   240
gtggttgtgg atttccacgc acagtggagt ggaccctgca agatcctggg gccgaggtta   300
gagaagatgg tggccaagca gcacgggaag gtggtgatgg ccaaggtgga tattgatgac   360
cacacagacc tcgccattga gtatgaggtg tcagcggtgc ccactgtgct ggccatgaag   420
aatggggacg tggtggacaa gtttgtgggc atcaaggatg aggatcagtt ggaggccttc   480
ctgaagaagc tgattggctg ac   502

<210> 14
<211> 502
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 14
atggctcagc gacttcttct gaggaggttc ctggcctctg tcatctccag gaagccctct   60
cagggtcagt ggccacccct cacttccaga gccctgcaga ccccacaatg cagtcctggt   120
ggcctgactg taacacccaa cccagcccgg acaatataca ccacgaggat ctccttgaca   180
acctttaata tccaggatgg acctgacttt caagaccgag tggtcaacag tgagacacca   240
gtggttgtgg atttccacgc acagtggtgt ggacccagca agatcctggg gccgaggtta   300
gagaagatgg tggccaagca gcacgggaag gtggtgatgg ccaaggtgga tattgatgac   360
cacacagacc tcgccattga gtatgaggtg tcagcggtgc ccactgtgct ggccatgaag   420
aatggggacg tggtggacaa gtttgtgggc atcaaggatg aggatcagtt ggaggccttc   480
ctgaagaagc tgattggctg ac   502

<210> 15
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 15
Cys Gly Pro Cys
 1

<210> 16
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<221> VARIANT
<222> 1
<223> Xaa = any amino acid except cys

```
<400> 16
Xaa Gly Pro Cys
 1


<210> 17
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<221> VARIANT
<222> 4
<223> Xaa = any amino acid except cys

<400> 17
Cys Gly Pro Xaa
 1


<210> 18
<211> 105
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 18
Met Val Lys Gln Ile Glu Ser Lys Thr Ala Phe Gln Glu Ala Leu Asp
 1               5               10              15
Ala Ala Gly Asp Lys Leu Val Val Val Asp Phe Ser Ala Thr Trp Ser
            20              25              30
Gly Pro Cys Lys Met Ile Lys Pro Phe Phe His Ser Leu Ser Glu Lys
        35              40              45
Tyr Ser Asn Val Ile Phe Leu Glu Val Asp Val Asp Asp Cys Gln Asp
    50              55              60
Val Ala Ser Glu Ser Glu Val Lys Cys Met Pro Thr Phe Gln Phe Phe
65              70              75              80
Lys Lys Gly Gln Lys Val Gly Glu Phe Ser Gly Ala Asn Lys Glu Lys
            85              90              95
Leu Glu Ala Thr Ile Asn Glu Leu Val
            100             105


<210> 19
<211> 105
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 19
Met Val Lys Gln Ile Glu Ser Lys Thr Ala Phe Gln Glu Ala Leu Asp
 1               5               10              15
Ala Ala Gly Asp Lys Leu Val Val Val Asp Phe Ser Ala Thr Trp Cys
            20              25              30
```

Gly Pro Ser Lys Met Ile Lys Pro Phe Phe His Ser Leu Ser Glu Lys
        35   40   45
Tyr Ser Asn Val Ile Phe Leu Glu Val Asp Val Asp Asp Cys Gln Asp
        50   .   55   60
Val Ala Ser Glu Ser Glu Val Lys Cys Met Pro Thr Phe Gln Phe Phe
65   70   75   80

Lys Lys Gly Gln Lys Val Gly Glu Phe Ser Gly Ala Asn Lys Glu Lys
                85   90   95
Leu Glu Ala Thr Ile Asn Glu Leu Val
                100   105

<210> 20
<211> 40
<212> DNA
<213> Artificial Sequence

<220>   .
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 20
gaagcaggcc caggcagagc ggaaagctgg gaagaggcag   40

<210> 21
<211> 5
<212> PRT ·
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 21
Thr Glu Arg Lys Ser
 1   5

<210> 22
<211> 19
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<221> misc_RNA
<223> double stranded

<400> 22
gccuuucuuu cauucccuc   19

<210> 23
<211> 19
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note = ،
      synthetic construct

<221> misc_RNA
<223> double stranded

<400> 23
ugcaguccug guggccuga   19

<210> 24
<211> 19
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<221> misc_RNA
<223> double stranded

<400> 24
cgaagcgagc caagggcaa   19

<210> 25
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 25
ctctcgatct gcttcaccat cttggctgga agcttgcggc taagatggtg aagcagattg   60
agagtaattt ttt   73

<210> 26
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 26
actaattcat taatggtggc ttcaagctga agcttgagct tgaggctact attaatgaat   60
tggtctattt ttt   73

<210> 27
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 27
cccacaccac gtggctgaga agtcaactga agcttgagtt ggcttctcag tcgcgtggtg   60
tgggtctttt ttt   73

```
<210> 28
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 28
tcttgctctc gatctgcttc accatcttga agcttgagga tggtgaagcg gatcgggagc      60
aggactgttt ttt                                                         73

<210> 29
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 29
gatcaaaaaa ttactctcaa tctgcttcac catcttagcc gcaagcttcc agccaagatg      60
gtgaagcaga tcgagagcg                                                   79

<210> 30
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 30
gatcaaaaaa tagaccaatt cattaatagt agcctcaagc tcaagcttca gcttgaagcc      60
accattaatg aattagtcg                                                   79

<210> 31
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 31
gatcaaaaaa agacccacac cacgcgactg agaagccaac tcaagcttca gttgacttct      60
cagccacgtg gtgtgggcg                                                   79

<210> 32
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
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synthetic construct

```
<400> 32
gatcaaaaaa cagtcctgct cccgatccgc ttcaccatcc tcaagcttca agatggtgaa      60
gcagatcgag agcaagacg                                                  79
```

```
<210> 33
<211> 73
<212> DNA
<213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct
```

```
<400> 33
caatgcgagc ggagggatgc acagcctaga agcttgtggg ttgtgcatct ctccgttcgc      60
attgcagttt ttt                                                        73
```

```
<210> 34
<211> 73
<212> DNA
<213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct
```

```
<400> 34
cttcttcagg aaggcctcca actgatccga agcttgggat tagttggagg ccttcttgga      60
ggagctgttt ttt                                                        73
```

```
<210> 35
<211> 73
<212> DNA
<213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct
```

```
<400> 35
tgtatattgt ccgggctggg ttgggtgtga agcttgatac ccagcccagt ccggataata      60
tacaccattt ttt                                                        73
```

```
<210> 36
<211> 79
<212> DNA
<213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct
```

```
<400> 36
gatcaaaaaa ctgcaatgcg aacggagaga tgcacaaccc acaagcttct aggctgtgca      60
tccctccgct cgcattgcg                                                  79
```

```
<210> 37
<211> 79
```

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 37
gatcaaaaaa cagctcctcc aagaaggcct ccaactaatc ccaagcttcg gatcagttgg   60
aggccttcct gaagaagcg   79

<210> 38
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 38
gatcaaaaaa tggtgtatat tatccggact gggctgggta tcaagcttca cacccaaccc   60
agcccggaca atatacacg   79

<210> 39
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 39
cctccgtggc cgcacgctcg ccctctgcga agcttggtag ggggcgagcg tgcggtcacg   60
ggggcgcttt ttt   73

<210> 40
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 40
atagccttcc acagtgtgca cagcatccga agcttggggt gctgtgtacg ctgtggaagg   60
ctattatttt ttt   73

<210> 41
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 41

```
tcaaccccct catgaagctg ctgtcacaga agcttgtgtg gcagtagctt catgaggggg      60
ttgatagttt ttt                                                         73
```

<210> 42
<211> 74
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 42
```
dgtggcagct ggtgctcctc gccctcgccg aagcttgggc gggggcgagg ggcaccggct      60
gctaccgctt tttt                                                        74
```

<210> 43
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 43
```
gcaaggatat actcctgaga tattctgcga agcttggtag gatgtctcag gagtatattc      60
ttgccggttt ttt                                                         73
```

<210> 44
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 44
```
ctcggggctg ctccgcgccc gccgggctga agcttgagcc tggtgggcgt ggagcggccc      60
cgagctgttt ttt                                                         73
```

<210> 45
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 45
```
aaccaggatg gtaatggctg tctgtaccga agcttgggta taggcagccg ttaccgtcct      60
ggttccattt ttt                                                         73
```

<210> 46
<211> 73
<212> DNA
<213> Artificial Sequence

```
<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 46
tcggctgccc ccgccaacag agctgcccga agcttggggc ggctctgttg gcgggggcgg      60
ctgatggttt ttt                                                        73

<210> 47
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 47
aatgactctc atgtggtcat tggctaggga agcttgctta gccgatgact acatgggagt      60
cattcaattt ttt                                                        73

<210> 48
<211> 73
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 48
cgccgccgcc tcctctccgg cgccctctga agcttgaggg ggcgtcggag gggaggcggc      60
ggcgtggttt ttt                                                        73

<210> 49
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 49
gatcaaaaaa gcgcccccgt gaccgcacgc tcgcccccta ccaagcttcg cagagggcga      60
gcgtgcggcc acggaggcg                                                  79

<210> 50
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 50
gatcaaaaaa ataatagcct tccacagcgt acacagcacc ccaagcttcg gatgctgtgc      60
acactgtgga aggctatcg                                                  79
```

```
<210> 51
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 51
gatcaaaaaa ctatcaaccc cctcatgaag ctactgccac acaagcttct gtgacagcag        60
cttcatgaag gggttgacg                                                      79


<210> 52
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 52
gatcaaaaaa gcggtagcag ccggtgcccc tcgcccccgc ccaagcttcg gcgagggcga        60
ggagcaccag ctgccaccg                                                      79


<210> 53
<211> 79
<212> DNA
<213> Artificial Sequence

<220>   .
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 53
gatcaaaaaa ccggcaagaa tatactcctg agacatccta ccaagcttcg cagaatatct        60
caggagtata tccttgccg                                                      79


<210> 54
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 54
gatcaaaaaa cagctcgggg ccgctccacg cccaccaggc tcaagcttca gcccggcggg        60
cgcggagcag ccccgagcg                                                      79


<210> 55
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct
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<400> 55
gatcaaaaaa tggaaccagg acggtaacgg ctgcctatac ccaagcttcg gtacagacag    60
ccattaccat cctggttcg                                                  79

<210> 56
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 56
gatcaaaaaa ccatcagccg cccccgccaa cagagccgcc ccaagcttcg ggcagctctg    60
ttggcggggg cagccgacg                                                  79

<210> 57
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 57
gatcaaaaaa ttgaatgact cccatgtagt catcggctaa gcaagcttcc ctagccaatg    60
accacatgag agtcattcg                                                  79

<210> 58
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:/note =
      synthetic construct

<400> 58
gatcaaaaaa ccacgccgcc gcctcccctc cgacgccccc tcaagcttca gagggcgccg    60
gagaggaggc ggcggcgcg                                                  79
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